REMARKS/ARGUMENTS

Applicant gratefully acknowledges allowance of claims 329-364, 370-380 and 385-391. Minor housekeeping amendments (which do not narrow the claims) have been made to claims 329, 334-338, 346-348, 385-389, and 391. Claims 365-369, 381-384 have been amended in this response, and the amendments are believed to place all of claims 329-391 in allowable form.

Claim Objections

The examiner objected to claims 221-222, 225-228, 234, 266-271, 276, 281, 284, 288-291, 294, 297, 300 307-308, 312, 314-315 and 318-322 are objected to as being dependent upon a rejected base claim. These claims have been amended and reorganized, and currently are pending as claims 550-602. Applicant respectfully requests allowance of claims 550-602.

Rejections under 35 USC §112, Second Paragraph

The examiner has rejected claims 305-306, 323-328, 365-369 and 381-384 under 35 USC §112, second paragraph.

Response

The amendments to the claims are believed to overcome these rejections.

Rejections under 35 USC §102

-Rejection over "Blanco" (US Pat. No. 5,783,525)

The examiner rejected claims 196-219, 223-224, 229-233, 235-240, 245-264, 267, 272-275, 277-280, 282, 283, 285-287, 292-293, 295-296, 298-299, 301, 303-306, 309-310, 313, 316-317, and 392-412 under 35 USC 102(b) as anticipated by Blanco et al (US Pat. No. 5,783,525). The examiner states that Blanco teaches an oil in water well servicing fluid which may be used for drilling, having a density within the scope of the present invention, which comprises a starch, xanthan and surfactants within the scope of the present invention. The examiner states that such

would inherently possess viscosity and surface tension within the scope of the present invention. Office communication, page 3.

Response

The substance of the rejected claims appears now in claims 413-549.

Blanco teaches a thermally stable well servicing fluid wherein:

> **[t]he ratio of oil to water in a suitable oil-in-water emulsion** may typically be between about **50:50 to about 70:30**, although other oil to water ratios may be desired depending upon the specific well servicing fluid.

Col. 3, ll. 40-43 (emphasis added). Claims 413-507 and 516-549 are directed to "an aqueous base comprising about **20 vol.% or less water emulsifiable material**." The examiner has not pointed to a teaching or suggestion in Blanco of a water based drilling fluid comprising about "20 vol.% or less water emulsifiable material" as claimed.

Claims 508-515 specify that the water-based drilling fluid comprises "an amount of from about 0.2 lb/bbl to about 4 lb/bbl surfactant in association with said water-soluble polymer." The examiner has not pointed to a teaching or suggestion in Blanco of a water based drilling fluid comprising "an amount of from about 0.2 lb/bbl to about 4 lb/bbl surfactant in association with said water-soluble polymer."

According to Blanco, "the surfactant mixture is preferably used in a concentration relative to the well servicing fluid of at least about 20,000 ppm." A drilling fluid containing 20,000 ppm of surfactant would have about 7 pounds per barrel of surfactant, as seen from the following calculations:

> 20,000 ppm = 0.02 lb. surfactant per pound of "fluid":
>
> A barrel of unweighted water based drilling fluid has a mass of approximately 350 pounds. Therefore, the concentration of surfactant in a barrel of such "water

based fluid" containing 20,000 ppm of surfactant is approximately 0.02 x 350 = 7 pounds per barrel.

or

$$20{,}000 \text{ mg/L} \times (1\text{lb}/(454\times10^{3}\text{mg})) \times (3.785\text{L/gal}) \times (42\text{gal/bbl}) = 7.004 \text{ lb/bbl}$$

Conversions:
1 milligrams/liter = 1 part/million
1 lb = 454 g
1 gal = 3.785 L
1bbl = 42 gal

The examiner has not pointed to a teaching of a fluid which meets the limitation requiring "an amount of from about 0.2 lb/bbl to about 4 lb/bbl surfactant in association with said water-soluble polymer."

Applicant respectfully requests that the rejection of the claims over Blanco be withdrawn.

-Rejection over "House" (U.S. Pat. No. 5,977,030)

The examiner rejected claims 196-200, 210-220, 223, 224, 229, 230, 235-239, 241-245, 247, 249, 251, 252, 254, 255, 257, 258, 260-264, 267, 272, 277-278, 282, 285, 289, 292, 295, 296, 298, 299, 301, 303-306, 309-310, 313, 316-317, and 392-412 under 35 USC 102(b) as anticipated by House (U.S. Pat. No. 5,977,030). The examiner states that House teaches a water in oil fluid which is used as a drilling fluid which comprises an oligosaccharide surfactant and a xanthan polymer. The examiner contends that fluids such as olefins and polyalphaolefins may be used as the internal phase, up to a level of about 30%, and that such would inherently possess fluid loss and surface tension within the scope of the present invention.

Response

House is directed to "aqueous base fluids which exhibit an enhanced low shear rate viscosity (hereinafter referred to as LSRV) and, in particular, to oil-in-water emulsions which exhibit an enhanced LSRV." Background of the Invention. House teaches:

> I have now determined that oil-in-water emulsions can be prepared **using as the emulsifier an oligosaccharide mixture** composed of sugar units selected from the group consisting of arabinose, mannose, galactose, glucose, xylose, and mixtures thereof consisting primarily of pentosens (sic) and hexosans containing from one to ten combined sugar units, preferably from one to four combined sugar units, hereinafter referred to as "OSM", and, optionally an alkaline earth metal oxide or hydroxide, preferably lime.

House, col. 1, ll. 27-35 (emphasis added). The examiner has not pointed to a teaching in House of a water based drilling fluid in which a quantity of water soluble polymer and an amount of surfactant associate to "provide said water based drilling fluid with effective rheology and fluid loss control properties," as required of all of the claims.

Control over the viscosity in the fluid of House is discussed in the following paragraph:

> The amount of the oleaginous liquid in the emulsion will depend on the concentration of the OSM and the AEMOOH.[1] Increasing the concentration of the OSM increases the viscosity of the emulsion. Increasing the concentration of oil increases the viscosity of the emulsion. The concentration of the AEMOOH is dependent upon the concentration of the OSM. **Generally the concentrations of OSM, oleaginous liquid, and AEMOOH will be such as to produce an emulsion having the desired viscosity and stability.** In general the emulsion will contain from about 5% to about 65% by volume of the combined liquid phases (oleaginous liquid and aqueous liquid) of the oleaginous liquid, from about 2 ppb to about 150 ppb OSM, and from 0 ppb to about 3 ppb AEMOOH. Preferably the emulsion will contain from about 10% to about 50% by volume oil (% v/v), from about 2 ppb to about 20 ppb OSM, and from about 0.5 ppb to about 2 ppb AEMOOH

D1, col. 3, ll. 41-57.

The examiner has not pointed to a teaching or suggestion in D1 of a fluid comprising a "quantity of water soluble polymer," and an "amount of surfactant in association with said water soluble polymer," wherein "said quantity, said amount, and said association provide said water soluble polymer with effective rheology and fluid loss control properties comprising low shear rate viscosity."

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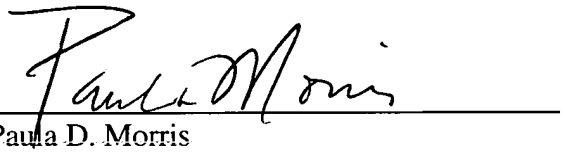
1 The AEMOOH is an "alkaline earth metal oxide or hydroxide. D1, col. 3, ll. 37-38.

Conclusion

For all of the foregoing reasons, Applicants respectfully request allowance of all of the pending claims. The Commissioner is hereby authorized to charge any fees in connection with this response, or to credit any overpayment, to Deposit Account No. 02-0429 maintained by Baker Hughes Incorporated.

Respectfully submitted,



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